

being employed by Keister to become introduced into the final product. Understandably, the Keister procedure can require some removal of residue from these foreign agents to avert weakening of the resultant bond strength while effecting such removal adds complexity to the overall preparation of Keister's product. It cannot thereby be concluded that the now claimed product and Keister's product are equivalent since the results for the dissimilar bonding procedures are simply not the same.

Further reliance by the Examiner under 35USC103 for obviousness of the now claimed invention in view of the Keister reference cannot be agreed with. The presently recited claims are all directed to a thermally bonded product as distinct from the dissimilar adhesive or solvent bonded product disclosed in Keister. A thorough and careful study of said reference finds no suggestion of any kind therein for thermal bonding of the applied fibers to the underlying pipe length as recited in the amended claims. It can only be concluded therefrom that obvious suggestion for the now claimed product rests entirely on unpermitted hindsight. A still further patentable distinct can be found in the presently amended claims which is not obviously suggested in said reference. As therein recited, the claimed product is formed by having the continuous fiber applied while maintaining said pipe length in its hollow condition during said procedure. Keister does not suggest such procedure so that any obvious suggestion thereof again necessarily rests on unpermitted hindsight. As recognized by applicant on pages 1-2 of the present application, the common procedure being employed when "relatively high fiber angles" are desired as in Keister requires use of a mandrel to support the pipe member while being wrapped with fiber. That the present applicant finds such mandrel use no longer to be required should be regarded as a further suggestion also not found in Keister.

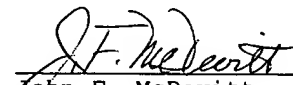
A still more detailed analysis of the Keister reference finds still other structural differences for the now claimed product. This reference deals with a reinforced "hose" which is required to retain flexibility during use (see Abstract description in said reference). As distinct therefrom, the now claimed discovery is a fiber reinforced

"pipe length" not requiring significant flexibility when used but rather retaining a relatively rigid state. The filament wound reinforcement layers in the Keister reference are also required to be applied in "half-lap" pairs to resist fatigue during use which is not a requirement for the now claimed product (see column 3, lines 27-33 in said reference). A still further requirement of Keister for the reinforcement fiber is a required "cord" construction which again is not an essential structure in the now claimed product. Braided reinforcement layers are also preferred in Keister's flexible hose construction as evident in most Figure drawings as well as in the Table I, example A embodiment providing highest burst strength. The number and nature of these structural differences for Keister's flexible hose product is thereby respectfully submitted not to provide any obvious suggestion of the present applicant's own discovery.

Keister furthermore employs dissimilar design criteria than applies to the now claimed product. The reinforced Keister hose is required to have a minimum "40,000 psi burst strength" while also resisting "flexing fatigue" during operation (see column 9, lines 36-43 in said reference). Resisting such fatigue is said to depend to a significant degree upon "torsional twist" being experienced when said flexible hose is operated under considerable operating pressure (see column 3, lines 28-33 in said reference) which thereby dictates a requirement for placement of the reinforcement fibers in oppositely wound pairs. As distinct therefrom, the presently claimed fiber reinforced thermoplastic pipe length remains relatively rigid during its operation with the fiber angle being primarily dictated by the intended pipe installation (see page 4, lines 9-19 in the subject application). Accordingly, above ground installations having the now claimed pipe construction generally requires a significantly different fiber angle than dictated for an in-ground installation in order to meet the applicant's design criteria. Based upon such further structural dissimilarity, between the respective devices, it can only be reasonably concluded that one skilled in this art can find no obvious suggestion of the now claimed product in the Keister reference.

In view of all of the foregoing summarized structural dissimilarities existing between the herein cited reference and the now claimed invention when considered together with the many advantages attributable to a simpler means of construction for said claimed invention, it is respectfully urged that all present claims 1-10 be allowed. Accordingly, favorable action upon this viewpoint is respectfully requested.

Respectfully submitted


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CERTIFICATE OF MAILING

I HEREBY CERTIFY that this Preliminary Amendment is being deposited with the Postal Service as first class mail in an envelope addressed to: ASSISTANT COMMISSIONER FOR PATENTS, WASHINGTON, D.C. 20231, on this 29th day of October 2001.


John F. McDevitt